ABSTRACT OF THE DISCLOSURE

The invention relates to genetical modification of DNA polymerase to reduce its innate selective sequence-related discrimination against incorporation of fluorescent dye-labeled ddCTP and ddATP in the enzymatic reaction for preparation of samples for automated florescent dye-labeled terminator DNA sequencing. The modified DNA polymerases are more resistant to heat inactivation and are more effective in dideoxynucleotide incorporation than current DNA polymerases.